The Citrus Industry

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RETROSPECTION

Occasionally it pays every person to take stock of their situation by viewing that situation in retrospect . . . such a practice, we feel sure, would ease the mental pain, if any, of every member of Florida's great citrus industry.

Ever since The Citrus Industry first came into being, more than twenty-four years ago, one of the most common complaints about the members of the industry has been that "Florida growers and Florida citrus factors just cannot get together" . . . and, frankly, there have been many times in the past when this plaint appeared to be well justified . . . but today, more than at any period in our recollection, there appears to be more evidence of coordination and cooperation among the many and diverse interests in the industry and more inclination to work together for their mutual benefit than ever before.

A few years back The Clearing House was organized and during its relatively brief existence there developed a more general spirit of cooperation than had existed up to that time . . . but like many other efforts to build some unified front in the industry which had preceded it The Clearing House ultimately faded out of the picture.

Fortunately, however, there existed among leaders in the industry a realization that Florida's citrus industry had grown to such proportions that the old hit or miss method of production and marketing with every grower and every factor looking only for his or their own interests was certain to lead only to disaster . . . this realization was developed into a very tangible achievement — the setting up of the Florida Citrus Commission.

This organization, like all others dealing with the state's citrus industry, came in for its full measure of criticism especially during the early stages of its existence . . . and like all new organizations doubtless made mistakes. There were times when politics entered too much into its set-up and when other phases of its activities might have been legitimate targets for complaint . . . but today we believe that an exceptionally large percentage of the industry is thoroughly "sold" on the fact that it is doing an outstanding job.

Not only is the present Commission free of the taint of political control but in addition to developing better fruit programs and carrying out a far-sighted program tending towards the development of a permanently enlarged market following the war, the present Commission we feel is doing a better job in coordinating the activities of all factors of the industry than any group in Florida's citrus industry.

Following our course in retrospection after reviewing briefly the development of closer harmony in the industry, there are few growers who cannot say today that they are infinitely better off than they were five years ago . . . most growers, large and small, can honestly say that their financial status today is much more sound than it was five years ago . . . many mortgages have been paid off entirely or reduced greatly according to the reports of the various Production Credit Associations . . . prices for fruit generally despite present complaints are such as to enable Florida growers to operate at a profit, even in the face of increased labor and production costs . . . comparatively Florida growers are in as sound a condition as any other business or industry — and most businesses and industries are in better shape economically than is their normal status.

There will always be differences of opinion in the industry . . . there will always be minor conflicts and jealousies, the same as in any other competitive enterprise . . . but that is no reflection upon the industry — it is simply the way of us Americans.

But having had a taste of the results of sound cooperation . . . it will pay every individual member of the citrus industry to determine that nothing shall happen to place the industry back on the old basis of where, figuratively speaking at least, each of the eight or ten thousand commercial citrus growers in the state looked upon each other member of the group as a bitter enemy and as a business rival who was trying to "stab him in the back."

Eighteen and a half million boxes of citrus fruit has been shipped from Florida so far this season. The citrus industry of this state may now very properly classify itself as a big industry.

"By their fruits ye shall know them" is nowhere more true than in the case of the citrus grower.

The grower must feed his grove if he expects the grove to feed him.

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HELP MAKE 1944 A VICTORY YEAR

This should be our year of victory. But victory depends on many things other than our courageous fighting men on the war fronts. One of the most vital factors of all is food—especially the vitamin-rich citrus fruits and vegetables produced by Florida growers.

Having served you Florida growers and farmers for more than fifty years, we have every confidence that the crop goals as fixed by the government agencies will be met and in many cases exceeded. The production of plentiful supplies of essential foodstuffs will save American lives and help clinch victory in 1944.

Therefore, in your effort to grow more and more fruits and vegetables, take advantage of every scientific tool that will increase crop production. Among such tools are IDEAL Fertilizers which have proved their great worth over a period of more than half a century.

You can count on the dependable quality of these fine fertilizers. They are scientifically formulated and carefully balanced to help you get the greatest possible yield in both quantity and quality. Use them in 1944 to speed the day of victory.

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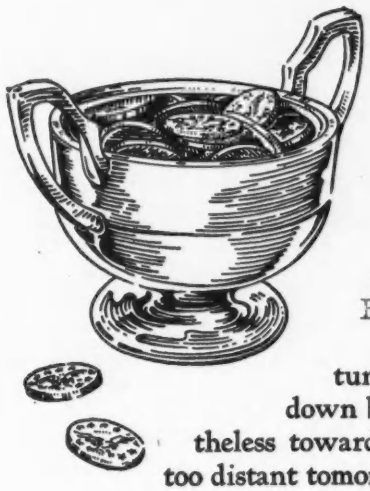
in Florida's Sugar-Bowl



LIMITLESS agricultural wealth fills Florida's vast Everglades sugar-bowl to overflowing . . . and there are also agro-industrial opportunities so brilliant that Florida may become a greater, richer manufacturing state than any Floridian has yet dared imagine. Development of these opportunities is under way . . . slowed down by war but moving ahead nevertheless toward a dazzling, prosperous and not too distant tomorrow.

Insignificant in comparison with the immense possibilities of the future but typical of the many finished agro-industrial products, that will one day be manufactured in the Everglades is the United States Sugar Corporation's recently developed Lemongrass Pulp and Molasses Feed for cattle.

This new feed is wholly a product of the Everglades. It is important to every Floridian because it reduces the cost of feeding beef and dairy cattle and encourages further growth of Florida's already important cattle industry.

Thus, step by step, are the unbelievable riches of the Everglades being converted for use. And each advance, however small, contributes to the present and future prosperity of all Floridians.

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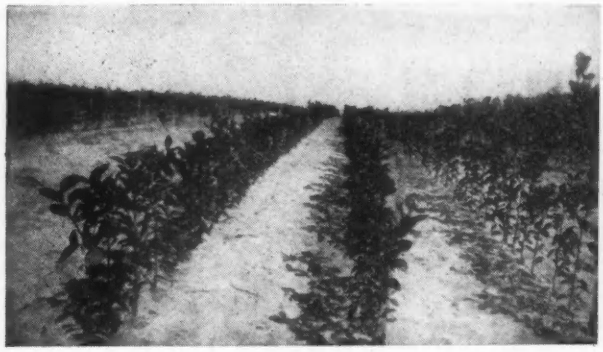

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WE REGRET

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Please do not take it that we are entirely sold out now, for we still have several thousand trees in some varieties and sizes, and we may have just what you want. Call us up, or write us stating the varieties and sizes you want, giving a second or third choice if you wish, and we will let you know if we can fill the order or how near we can come to it. Or, come to Bartow and we will be glad to show our trees to you.

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The Citrus Industry
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Issued Monthly
Representative of every interest
Representing no special interest

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War Food Administration And The Citrus Industry

By H. G. Hamilton, Senior Marketing Specialist, Fruit and Vegetable Branch, Food Distribution Administration, at Meeting of Florida State Horticultural Society

One thing we should have learned from the past is that we cannot see far into the future. Who among us in 1929-30, when both grapefruit and oranges were returning approximately $1.75 per box on the tree, thought that by the 1932-33 season the price of grapefruit for fresh consumption would be $0.42 per box and oranges only $0.64 per box? And who in 1938-39, when grapefruit for fresh consumption returned $0.30 per box, and for processing only $0.16 per box, and oranges for fresh consumption only $0.59 per box, thought that by May 1943 Florida grapefruit would be returning from $1.45 to $2.35 per box on the tree or that Florida oranges would be returning from $2.25 to $2.90 per box. In 1941, at Camp McQuarrie, when one speaker indicated that $1.25 per box for grapefruit and $1.75 per box for oranges might again come to pass, his forecast was termed fantastic, unbelievable and impossible. In 1939 we were using all the forces at our command to raise the price of citrus fruit; today we are resorting to ceiling prices in our effort to avoid a runaway inflation.

Programs of the Past

Programs of the past have not always met with success, and, as we shall point out later, are not adapted for the present job. Nevertheless, we should profit by the experience of those programs. The Florida Citrus Growers Clearing House Association attempted to advertise, regulate total shipments from the state, regulate shipments to auction markets, enforce grades and packs and fix maximum prices, with the shippers representing only 80 percent of the crop cooperating. Those who administered this program do not have to be told that the 20 percent minority nullified to a large extent the efforts of the 80 percent majority. The first marketing agreement, with 100 percent control, failed because too much was undertaken with too little experience. Later marketing agreements, supplemented by relief purchases and further supplemented by compulsory grading, and advertising, were partially successful. But, too often purchases for relief competed with non-relief sales so that the total demand was changed very little. Later, school-lunch programs were developed. Oranges consumed at school did not compete with oranges in normal channels of trade. The stamp program, which was a subsidy to low-income consumers, was perhaps more desirable than relief purchases.

Programs for other commodities attempted to deal with the surplus problem in various ways. In the case of milk, two price systems were instituted in a number of cities; one price to medium- and high-income consumers and another price, to low-income consumers. A two-price system for citrus was studied but never put into operation.

Loans were made on corn, cotton and wheat to prevent price declines. None of these programs dealt adequately with the surplus problem. These programs were all primarily for the benefit of the producer and attempted to remove surpluses and increase prices to producers. Volume, grade and size regulations were instituted to insure an orderly movement of the citrus crop to market in order that higher prices might be returned to the grower. The purchase of fruit for relief was done quite as much for the purpose of increasing prices to growers as for improving the diet of low-income consumers.

Past Versus Present Conditions

Today the problem is different from that of yesterday. Pearl Harbor wiped out the surpluses, and unprecedented consumer incomes have sent prices skyrocketing. It is somewhat ironical that the supply of citrus fruit is greater for the 1942-43 season than for any previous season and yet there is actually a scarcity. Some markets and some stores in other markets have been without fruit. For more than 3 months California oranges and for several weeks Florida oranges and grapefruit have been selling at ceiling prices. We may be confronted with the necessity of regulating shipments not to bring greater returns to growers, for fruit is already selling at ceiling prices, but for the benefit of consumers. Until the 1942-43 season, transportation facilities, containers and labor were adequate. Fruit could be supplied in any quantity at any time and in any type of container that the consumer demanded. Today, with shortage of tin, containers, labor and transportation facilities, the problem is different. In another season the question will be, not whether the consumer wants his citrus fruit fresh, canned, or in concentrated form, but, in view of transportation, material and labor shortages, what

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Decay Control In Florida Lemons[1/]

Presented At Meeting of Florida State Horticultural Society

Although lemons have been grown in Florida on a limited commercial scale for many years, the industry has never assumed large proportions. There are good reasons for this. In addition to the problems peculiar to lemon production, several other problems present themselves after the crop is harvested.

Florida lemons mature and are usually marketed in late summer and fall. They are susceptible to the same types of decay found commonly in other citrus fruits at that season. Stem end rot is the most prevalent form of spoilage, mainly because weather conditions at harvest time are more favorable for the development of the organisms causing stem end rot, **Phomopsis citri** and **Diplodia natalensis**, than for the development of other common rot-producing fungi. These two organisms gain entrance into the fruit only through the stem parts, rarely making the invasion in less than two or three days after the fruit is harvested.

If frequent showers occur when the fruit is being harvested, stem end rot may develop quite rapidly, but during a protracted drought this rot is not likely to develop so quickly. However, regardless of moisture conditions at harvest time, stem end rot remains the principal cause of decay in Florida lemons.

Lemons at harvest time are usually too green in color to be attractive, so the common practice is to degreen them with ethylene in the same manner as oranges. Conditions for this "coloring" are also excellent for the rapid growth of Diplodia, and stem end rot caused by this fungus is likely to develop in gassed fruit unless measures are taken to prevent it. Fortunately this gassing treatment loosens the stems to such an extent that they may be removed easily, especially early in the season.

The object of this investigation was to apply or devise a control measure for stem end rot in lemons which does not greatly upset existing handling or marketing practices. The fact was recognized that lemons are likely to be held at room temperature during marketing and consumption and that this period is likely to be longer than with many other fruits.

The experiments reported herein cover two seasons and are limited to harvesting methods and the use of antiseptics applied before or after the fruit was subjected to etnylene.

Materials and Method

The lemons used in 1937 were from young Perrine trees in Highlands County and from old Villa Franca trees in Orange County. The latter grove was again used in 1942 as a source of fruit. In the season of 1937 harvesting by pulling the fruit was compared with the more common practice of harvesting by clipping. The removal of the stem buttons immediately after the gassing treatment and also the effectiveness of 8% borax applications as decay preventive measures were tested, but none of the fruit was treated with wax or other wilt retarding materials. In 1942 the same tests were repeated and expanded to include applications of antiseptics in water or in wax emulsion, or simply wax emulsion applied after the fruit had been subjected to the usual degreening treatment.

No unusual care was exercised in harvesting or handling the fruit. The lemons were brought to the laboratory at Orlando the day they were picked and sorted to remove bruised, clipper-cut, and badly torn or "plugged" fruits.

Borax applied before gassing consisted of an 8% solution in water at 110° F. for two minutes. The antiseptic was allowed to dry and re-

1/ By J. R. Winston, senior horticulturist, and G. R. Meckstroth, associate pathologist, Division of Fruit and Vegetable Crops and Diseases, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, U. S. Department of Agriculture.

TABLE 1. Decay development in Florida lemons as influenced by harvesting methods and packing house treatments.
Percent decay accumulatively—1937—Perrine and Villa Franca Lemons

Method of Harvesting and Treatment	Comparison	No. Lots	No. Fruit	Percent decay—cumulative							
				Days after picking							
				6	9	13	16	20	23	27	30
Perrine Lemons											
Clipped, no treatment	A	2	100	0	8.0	18.0	24.0	31.0	38.0	43.0	44.0
Pulled, no treatment	A	2	100	1.0	2.0	3.0	7.0	9.0	13.0	17.0	20.0
Clipped, ethylene	B	2	100	8.0	35.0	49.0	53.0	62.0	66.0	67.0	68.0
Pulled, ethylene	B	2	100	2.0	3.0	11.0	16.0	19.0	23.0	25.0	27.0
Clipped, borax, ethylene	C	2	100	2.0	8.0	18.0	24.0	26.0	29.0	29.0	32.0
Pulled, borax, ethylene	C	2	100	0	4.0	10.0	13.0	17.0	21.0	25.0	25.0
Clipped, ethylene, disbutton	D	2	100	1.0	5.0	11.0	14.0	15.0	15.0	17.0	17.0
Clipped, borax, ethylene disbutton	D	2	100	0	3.0	8.0	14.0	19.0	23.0	26.0	28.0
Clipped	E	All	300	3.3	17.0	28.3	33.7	39.7	44.3	46.3	48.0
Pulled	E	All	300	1.0	3.0	8.0	12.0	15.0	19.0	22.3	26.0
Villa Franca Lemons											
Clipped, no treatment	A	3	160	1.2	3.7	8.7	12.5	18.7	23.7	29.4	35.0
Pulled, no treatment	A	3	134	.7	5.2	9.7	12.7	20.9	28.3	34.3	43.3
Clipped, ethylene	B	3	160	3.7	41.9	60.0	65.6	71.9	80.6	85.0	87.5
Pulled, ethylene	B	3	150	.7	14.7	28.0	32.7	39.3	48.7	57.3	62.0
Clipped, borax, ethylene	C	3	160	3.7	16.9	26.9	35.6	46.2	51.2	56.9	61.2
Pulled, borax, ethylene	C	3	150	2.0	23.3	35.3	38.7	42.7	48.7	53.3	58.7
Clipped, ethylene, disbutton	D	3	160	3.7	11.2	15.6	16.9	20.0	21.3	21.3	27.5
Clipped, borax, ethylene, disbutton	D	3	160	1.9	11.9	15.6	22.5	28.1	30.6	35.0	39.4
Clipped	E	All	480	2.9	17.1	25.4	30.6	37.0	41.5	45.5	50.1
Pulled	E	All	434	1.0	12.5	22.9	27.4	33.9	41.4	48.1	54.8

main on the fruit until after the gassing period.

Fruit was left in the ethylene room only long enough to degreen, never more than 64 hours. The room was operated at 82° F., 92% relative humidity. The ethylene never exceeded a concentration of 1-50,-000.

At the end of the gassing period all lots of fruit were washed and some were given one of the following post-gassing treatment: (1) 1.2% sodium-ortho-phenyl-phenol in water followed immediately by thorough rinsing; (2) 2% borax in a diluted wax emulsion; (3) wax emulsion (19% solids, mostly paraffin), diluted 1-10; (4) wax emulsion (19% solids, mostly paraffin), applied 24 hours after the gassing period; (5) 2% sodium-ortho-phenyl-phenol in a diluted wax emulsion applied 24 hours after gassing. All applications were made at 100° F. for two minutes, and the fruit receiving the various wax emulsions was not rinsed afterwards. All lots were passed over drying brushes to remove excess moisture.

The various collections of lemons were then stored in a holding room for thirty days. This room was maintained at a fairly constant temperature, near the average for the season; in late summer it was held at about 80°, but it dropped gradually to 75° in mid-fall. The fruit was inspected twice each week, and all decaying or badly blemished individuals were recorded and discarded.

The data obtained from holding the Perrine and Villa Franca lemons are treated separately because of difference in age of the trees, their locations, and varietal characteristics.

Results

The spoilage data obtained in 1937 from holding tests with two lots of Perrine lemons of 50 fruits each and three lots of Villa Franca lemons of approximately 50 fruits each are presented in table 1.

Perrine Lemons

Perrine lemons harvested by pulling developed much less decay than those harvested by clipping whether non-gassed (comparison A), or gassed (comparison B). The gassing treatment increased decay in both clipped and pulled fruit, a fact which has been known so long that it hardly warrants comment (comparison A and B).

8% borax applied before the gassing treatment reduced decay in clipped fruit but failed to reduce it in pulled fruit (comparisons C and B).

Pulled, gassed fruit (not treated with borax) (B) held up better than clipped, borax-treated, gassed fruit (C) and about as well as clipped, borax-treated fruit disbuttoned after gassing (D).

Fruit disbuttoned after the gassing treatment gave the most effective decay control in the clipped lots. Borax applied to such fruit before gassing had but little effect on subsequent decay (comparison D).

When the fruit was grouped by harvesting methods, pulled fruit decayed much less rapidly than clipped fruit (E).

Villa Franca Lemons

Pulling did not reduce decay in non-gassed fruit of Villa Franca (comparison A). Gassed lemons harvested by pulling decayed much less

(Continued on page 10)

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Our Good Fortune

. . . to be able to maintain almost intact, our entire staff of field service men—NACO continues to render the kind of grower service that helps produce the bumper crops needed to meet wartime food-production goals.

This service plus the unselfish advice given Florida growers in matters of cultural practices, fertilizer requirements and insect and disease control, often means the difference between the market returns on an ordinary crop and one of higher quality and increased yield.

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for fertilizers, insecticides and farm machinery.

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Care For Your Farm Machinery

By Frazier Rogers
Professor of Agricultural Engineering, University of Florida

The outstanding characteristic of the American farmer has been production per man. There are many countries in which the yield of crops per acre is higher than here, but there is no country on the face of the earth in which the production of crops per man exceeds that of the United States. This is due largely to mechanization of agriculture.

Power and machinery are put to work so that a man's production is not limited by his own strength but rather by his ability to use power and machinery. The great production goals of 1943 were realized because the women and men on the farms of the nation could and did use the machinery of agricultural production in such an efficient manner.

It should also be kept in mind that this great increase in agricultural production was accomplished in spite of a reduction in farm manpower. The future needs for the products of the farm will increase, and as the war progresses to a successful conclusion, greater production demands on agriculture may be expected. Then, if farm machinery is playing such an important role in the conduct of the war it is well for us to take stock at the beginning of the year and see if everything is well on the farm machinery front before the big push begins.

While it is true that more new farm machinery will be available in 1944 than in 1943, much of it will be received too late for this year's crop. The release of materials for manufacture came at such a late date that it will be well along in the year before much of this year's production arrives on the market. So too much dependence should not be placed on new machinery.

Put your machinery in the best condition possible. There are no restrictions on the manufacture of repair parts for farm machinery, but manufacturers will not know just what parts to make unless farmers let them know. And the farmer can't determine his repair needs unless he gives his machinery a thorough inspection. Of course, the best time to have made this inspection was just as soon as use of the machine was over last season. Go over all machinery thoroughly and place orders for new parts that are needed. Usually there are only a few parts to each machine where wear is excessive and parts will need replacing, but a machine, like the proverbial chain, is no stronger than its weakest link, which is another way of saying that all parts of a machine must function properly if the machine is to do its best.

Make the necessary adjustments where new parts are not necessary. Most machines have various adjustments for wear, which if made in time prolong the life of the part many days or even years. Tighten all nuts that have become loose. Loose bolts and nuts cause vibration in machinery and put undue strain on parts. This causes increased friction, which means lost power, as well as shorter life for the machine.

Consider giving your machinery a coat of good paint. Machines that have been stored for some time should be dry and clean and ready to receive a good paint job. While paint is excellent for improving the appearance of machinery, its greatest value is in making it last longer.

Metal subjected to moist air soon oxidizes or rusts. If the air cannot make contact with the metal it is impossible for it to rust. A good coat of paint will pay high dividends in prolonging the life of metallic parts. The parts of a machine that become bright due to contact with the soil should be covered with a coating of oil when not in use.

Unpainted wood absorbs water and provides an ideal place for the growth of rotting organisms. A coat of good paint on wood prevents it from absorbing water and therefore reduces decomposition because these organisms are dependent upon moisture for growth and development. Rusting and rotting is often more destructive to machinery than the actual use.

Proper lubrication is absolutely essential to long life of machinery of any kind. Too often, the oil holes on our farm machinery are allowed to become clogged and the moving parts are not adequately oiled. While inspecting machinery for needed repairs, make it a point to pay special attention to lubrication provisions. Replace all compression cups that are missing — so often they get broken off and are never replaced.

It is a patriotic duty of farmers to make farm machinery last as long as possible, it also should be remembered that a little care and repair in time means savings for the farmer, also.

The depreciation, in dollars, of new machinery is much greater than machines that have been in use some time. So proper care and repair make lower machinery costs.

So, in 1944 keep them rolling by having them ready to roll when the farm machines are needed.

WAR FOOD ADMINISTRATION AND THE CITRUS INDUSTRY

(Continued from Page 5)

will be the most practical form for him to receive it. Because of price ceilings, it may be desirable to divert shipments from one market to another, not for the purpose of getting a higher price but to relieve extreme shortages caused by ceilings.

In addition to the differences as between surpluses and low prices of the past and the scarcity and high prices of the present, there is the more important difference of programs. In the past, efforts to improve the status of citrus growers were made largely without regard to other commodities, or to consumer or industry needs. Today the solving of the problems of the citrus industry must be coincident with the solution not only of those other food industries but of those of all industry and of transportation as well, in order that the war effort may be best served. Today we are at war, and the program of "every industry for itself and the devil take the hindmost" has no place in our economy. Certainly we find ourselves in a new situation in which new techniques and programs must be developed in order to do the job properly. Already some progress has been made.

On December 5, 1942, by Executive Order (No. 9280), the Secretary of Agriculture was charged with the responsibility of obtaining an adequate supply and efficient distribution of food to meet war and essential civilian needs. Subsequent Executive Orders combined certain branches of the Department of Agriculture into the War Food Administration and placed in charge the War Food Administrator who is responsible only to the President.

The Job of the War Food Administration

The job of the War Food Administration is to get people fed as well and as equitably as possible with the supplies, equipment and manpower available. It consists of: First, getting food produced; second, utilization of food produced in the most efficient forms, i. e., fresh, canned, concentrated, dehydrated; and third, distribution of the existing food supply between the military forces, Lend-Lease, conquered lands liberated, and civilians. But the job is complicated by the fact that the production of munitions, planes, ships and the maintenance of transportation facilities must be synchronized with feeding the people.

The Production Job

Nothing can be done now to increase citrus production through increasing acreage. The job is to get maximum production from existing acreage. Obviously, increased vegetable acreage is practical and one of the most effective ways of increasing production. With the shortage of materials, equipment and labor and of transportation facilities, it must be determined whether the application of materials, labor and equipment will contribute more to the Nation's food supply when used on citrus, or on beans, cabbage or potatoes. More fertilizer, equipment and labor applied to citrus means more citrus, but it may mean less beans and potatoes. Similarly, additional nitrogen may mean more beans and potatoes but less explosives; irrigation pipes may mean more citrus, but less steel for ships. Always the problem is which is needed more — citrus or potatoes or beans or explosives or ships. The ingenuity of

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U. S. farmers produced more food in the last three years than in any comparable period; more food than any other country ever produced in that length of time.

Nearly 2,500,000 tons of natural nitrate was brought in from Chile in that same period, to help in the vital production job.

Each year U. S. farmers smashed—**smashed**—their goals. Each year they produced more than was asked of them, more than the year before.

Now the biggest job of all is right ahead. U. S. farmers again will need every pound of soda they can get, **and they will get every pound that can be brought from Chile in time for 1944 crops!** There is good reason to hope that ships will be provided to bring enough nitrate for every necessity.

Chilean Nitrate has always been a tremendous factor in food production. For one thing, it has farmers' complete confidence in its favor. They have used it always. They know it well—how to use it, what to expect of it. They like its ideal physical condition; its excellent shipping, storing and handling qualities; and its safety and efficiency for side dressing and top dressing. Such confidence, coming from long and satisfactory experience, means half the battle won.

Last year Chile sent 1,000,000 tons of nitrate to United States farmers. This year another 1,000,000 tons is ready, waiting only for ships to bring it in...**another 1,000,000 tons of soda to help make Victory sure.**

1,000,000 tons of natural Chilean Nitrate—the tonnage farmers used last year—properly applied, would produce 250,000,000 bu. of oats or 100,000,000 bu. of wheat; 125,000,000 bu. of corn, 4,800,000 tons of forage crops, or 6,000,000 tons of vegetables, or 2,500,000 bales of cotton and 1,100,000 tons of cotton seed.

Natural **CHILEAN NITRATE** *of* **SODA**

DECAY CONTROL IN FLORIDA LEMONS

(Continued from page 7)

rapidly than those clipped from the trees (comparison B). Again the ethylene treatment stimulated decay in both clipped and pulled fruit, but the increase was greater in the clipped lots (comparisons A and B). Borax greatly reduced decay in clipped fruit subjected to ethylene but did not reduce decay in pulled fruit (comparisons B and C). Disbuttoning of gassed fruit gave the most effective decay control. Borax applied before gassing did not further reduce decay in disbuttoned fruit (comparison D).

When the fruit was grouped by harvesting methods, that harvested by pulling decayed slightly less than clipped fruit (comparison E).

During the fall of 1942 the investigation was resumed, being limited, however, to Villa Franca lemons but expanded to include the use of sodium-ortho-phenyl-phenol in water and sodium-ortho-phenyl-phenol as well as borax added to the water phase of the emulsion for decay control, and wax emulsion for shrinkage control. Results are presented in table 2.

In both non-gassed (A) and gassed (B), clipped fruit decayed more rapidly than pulled fruit, and again ethylene stimulated decay in both clipped and pulled fruit (comparisons A and B).

8 percent borax solution applied immediately after harvest reduced decay in gassed fruit (comparisons C and B), but the reduction was greater in the clipped than in the pulled.

Disbuttoning after the gassing period gave the most effective control of decay. Borax application given before the gassing treatment did not further reduce decay in fruit disbuttoned after gassing (treament D).

2 percent borax applied in wax emulsion after gassing failed to reduce decay (comparisons E and H).

2 percent phenate (sodium-ortho-phenyl-phenol) in wax emulsion applied to clipped fruit immediately after gassing was about as effective during the first two weeks as borax applied before gassing. During the latter half of the holding period, borax afforded the greater protection, a commonly accepted fact. On pulled fruit the phenate was more effective than borax for about three weeks (comparisons C and G).

Delaying the application for one day, using the original solutions of phenate in emulsion, did not reduce its efficiency in controlling decay (comparisons C and J).

1.2 percent phenate in water applied after gassing was considerably less effective in controlling decay in clipped fruit than borax applied before gassing, but on pulled fruit was somewhat more effective (comparisons C and F).

Wax emulsion applied either immediately after the gassing period or a day later had but little effect on decay in clipped fruit. However, the former may have stimulated decay slightly in pulled fruit during the first three weeks (comparisons H and I).

In eight out of nine comparisons decay developed more rapidly in the clipped fruit than in the pulled. In the one exception there was little difference in the rate of decay throughout the holding period.

When consolidated by methods of harvesting, pulled fruit again held up better than clipped (comparison K).

During the progress of this investigation cultures were made from stem-end rot infected fruits as shown in table 3. Cultures from non-gassed fruit showed that approximately 90 percent of this decay was caused by **Phomopsis citri**, the melanose fungus.

Ethylene increased stem-end rot and greatly increased the proportion caused by **Diplodia natalensis.**

Borax suppressed the percentage of stem end rot in gassed fruit to approximately that in non-gassed

(Continued on page 18)

TABLE 2. Decay development in Florida lemons as influenced by harvesting methods and packing house treatments.

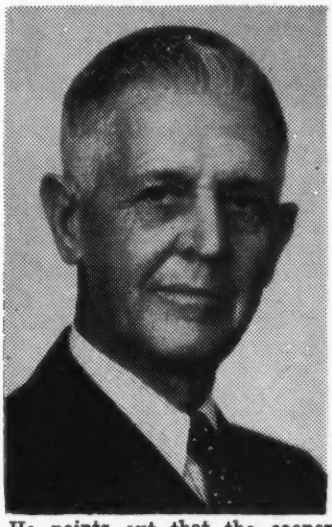
Percent decay accumulatively—1942—Villa Franca Lemons

Method of Harvesting and Treatment	Comparison	No. Lots	No. Fruit	Percent decay—cumulative							
				Days after picking							
				6	9	13	16	20	23	27	30
Clipped, no treatment	A	6	346	0	.6	4.3	8.7	15.3	18.5	22.3	25.7
Pulled, no treatment	A	6	312	0	.3	1.0	2.2	4.2	6.9	8.3	9.9
Clipped, ethylene	B	6	345	.3	4.9	16.2	24.3	32.5	35.9	39.7	43.5
Pulled, ethylene	B	6	313	.3	5.4	11.8	14.7	17.6	20.8	25.2	27.2
Clipped, borax, ethylene	C	6	346	0	1.2	5.8	9.2	13.0	16.2	17.9	19.7
Pulled, borax, ethylene	C	6	318	.6	4.1	6.3	9.1	13.8	17.7	19.6	21.5
Clipped, ethylene, disbutton	D	6	346	0	.9	1.2	3.2	3.8	4.6	5.2	5.5
Clipped, borax, ethylene, disbutton	D	6	346	.6	2.0	3.8	4.6	6.4	8.4	10.4	11.6
Clipped, ethylene, borax in emulsion	E	5	271	.4	7.7	25.1	34.7	44.3	46.9	50.2	54.2
Pulled, ethylene, borax in emulsion	E	5	261	.8	7.3	13.8	17.6	21.1	24.1	27.6	30.7
Clipped, ethylene, phenate* in water	F	6	351	0	2.6	14.0	22.2	33.0	35.9	41.6	46.2
Pulled, ethylene, phenate in water	F	6	324	1.2	2.2	4.9	6.2	9.3	10.8	14.5	17.0
Clipped, ethylene, phenate in emulsion	G	6	343	0	.3	7.3	18.4	32.7	40.2	47.2	51.9
Pulled, ethylene, phenate in emulsion	G	6	314	1.0	1.3	3.2	5.7	8.6	14.0	18.5	21.3
Clipped, ethylene, wax emulsion	H	6	346	.3	5.8	18.8	26.3	32.9	38.2	45.1	47.4
Pulled, ethylene, wax emulsion	H	6	315	.6	12.7	18.4	22.2	25.4	26.7	29.8	33.0
Clipped, ethylene, emulsion, delayed	I	4	225	0	3.1	13.3	20.0	30.7	33.3	37.3	40.0
Pulled, ethylene, emulsion, delayed	I	4	222	1.4	3.6	10.4	14.0	19.4	23.4	24.8	27.5
Clipped, phenate in emulsion, delayed	J	4	222	.5	1.4	4.5	9.0	20.7	31.1	40.1	46.4
Pulled, phenate in emulsion, delayed	J	4	217	.9	2.3	4.1	5.1	7.8	8.8	10.6	12.0
Clipped	K	All	3137	.1	2.8	11.7	18.6	27.7	32.4	37.2	40.8
Pulled	K	All	2923	.6	3.9	7.4	9.4	12.9	15.6	18.5	21.0

* Sodium-ortho-phenyl-phenol. 1.2% in water; 2% in diluted wax emulsion.

Walker Urges Citrus Growers To Cooperate

Terming the cooperative way "the way of freedom and equality of opportunity as secured to us all under the Fourteenth Amendment of the Constitution", President Charles H. Walker of the Florida Citrus Exchange, urges all Florida groups to unite in support of the National Council of Farmer Cooperatives.



He points out that the cooperative way is now under attack by direct organized effort and it behooves every group of organized cooperatives, especially in the predominantly agricultural states like Florida, to unite and defeat this movement.

Along with the attack on cooperatives there is a concurrent effort to weaken and emasculate farm credit agencies which cater to the credit needs of agriculture.

Some results of this campaign are already apparent. Farm co-ops, for instance, would be required to file an annual income statement under a provision adopted by the House Ways and Means Committee in shaping up a new tax program. Under the existing laws, one certificate of non-profit exemption from the Treasury Department permanently exempts such organizations from filing a return. This move, Walker contends, is more than a mere symptom of the bureaucratic tendency to require questionnaires on every conceivable form of activity.

Defeat of these and other dangerous measures, he contends, can only be assured by a united front on the part of all co-ops. Every Florida cooperative should be represented in the one organization qualified to meet the issue, The National Coun-

(Continued on page 14)

The Need For Food Becomes Acute

The shortage of food supplies is greater this year than last. Surplus supplies are rapidly becoming exhausted and many producers are discouraged over price and supply problems, but we must not slow up. THE NEED FOR FOOD IS BECOMING MORE AND MORE VITAL.

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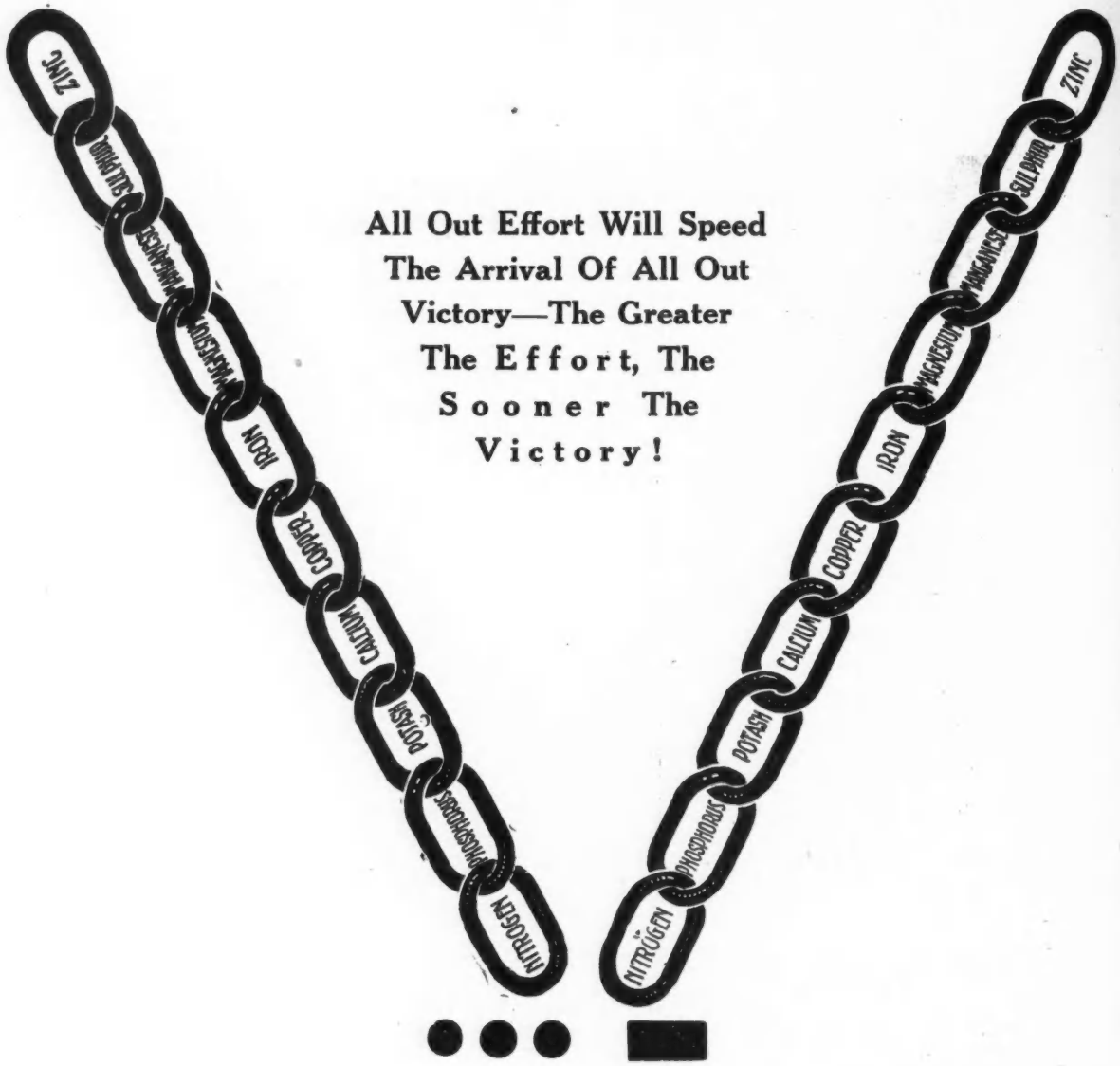

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The Fertilizer Situation From A National Standpoint

A statement presented by L. G. Porter, Consultant, Chemicals and Fertilizers Division, War Food Administration, at 56th Annual Meeting of the Florida State Horticultural Society, Winter Haven, Florida, May 27 1943.

It is with great pleasure that I meet with you today. I wish to express my appreciation for your kind invitation to appear on the program and want to thank those who have made it possible.

The topic assigned to me is one of broad significance, and as I know one in which you are all vitally interested—that of the fertilizer situation from a national standpoint. Usually in circumstances such as this meeting, a prepared paper is delivered. In this instance, however, if you will bear with me, I will attempt to discuss certain aspects of my topic in an informal manner, asking that my statements be accepted as representing the fertilizer picture as we now see it. Accordingly, my discussion will serve to amplify some of the comments which have just been given to you by my friend, Fred Woods, in his talk on the Fertilizer Situation in Florida.

First, let us look briefly at the over-all fertilizer requirements of 1943-44 in terms of minimum need for nitrogen, phosphoric acid and potash in the continental United States. The estimates which I will present are based upon crop goal acreage as set out in the April 1943 issue of Crops and Markets, using rates of application per acre recommended by the various State Agricultural Experiment Stations as related to the fertilized acreage of the respective crops. You realize, of course, that crop goal acreages for next year have not been established, and that my figures are subject to subsequent modification.

On the foregoing basis, we compute our minimum crop requirement of nitrogen for the 1943-44 season in the continental United States to be about 475,000 tons. If, as has been proposed, increased emphasis is placed upon an augmented feed and forage crop program, this minimum requirement of nitrogen might be increased by some 180,000 tons to a total of approximately 655,000 tons of nitrogen. Our estimated minimum needs for phosphoric acid in the continental United States during 1943-44 is approximately 1,200,000 tons of P_2O_3, with additional quantities required if the forage crop program is undertaken in full. Potash requirements for agriculture, as a minimum, are established for next season to be about 545,000 tons of K_2O. So much for the requirements picture as we now visualize it. Let us now briefly consider the supply outlook.

Considering nitrogen first, there has been, as you are perhaps aware, a marked improvement in the outlook for chemical nitrogen for 1943-44. It is presently estimated that domestic production of chemical nitrogen available for agriculture, plus imports from Canadian plants, will be in the neighborhood of 505,000 tons of N. If to this is added an expected 20,000 tons of N from customary organics, we have a total of 525,000 tons of N for fertilizer purposes. Taking into account conversion losses in formulation and manufacture of finished goods, the foregoing total represents a net of about 512,000 tons of N for fertilizer purposes.

You may be interested in the types of chemical nitrogen materials we expect to obtain in 1943-44. Commercially produced materials, such as synthetic sodium nitrate, sulphate of ammonia and nitrogen solutions, represent about 40 percent of the total. Solutions separately comprise about 16 percent of the possible supply, a factor which in itself represents a major problem to the fertilizer industry since material of this type will be needed to be taken on a month-to-month basis as produced. About 30 percent of the chemical nitrogen is expected to be in the form of by-product sulphate of ammonia. Canadian exports to the United States such as ammonium nitrate, calcium cyanamid, and ammonium sulphate and phosphate are expected to represent about 20 percent of the total, with the balance of about 10 percent obtained from miscellaneous domestic sources. It should be pointed out that no estimate has yet been set covering imports of nitrate of soda from Chile. Any supplies from that source will, of course, make the situation that much easier.

With respect to superphosphates, the industry has been requested to produce a minimum of 6,500,000 tons of the material, basis 18 percent P_2O_5 during the 1943-44 season. In addition, some tonnage of triple-superphosphate will likely be available in some areas, particularly in the Mid-west.

Our potash supply for 1943-44 is expected to be about 550,000 tons or about 7 to 8 percent less than the tonnage available to agriculture during the season just closing. This figure includes, however, some tonnage from Russia and is based upon 100 percent operating efficiency of domestic producers. To sum up, the present outlook indicates that we are going into next season in a generally easier position than we faced last year, particularly with respect to chemical nitrogen. The situation is not one, however, that warrants full relaxation of restrictions on the use of fertilizers or justifies steps which would throw the door wide open to indiscriminate usage of vital plant foods. There must continue to be some direction to assure that fertilizer will be utilized for purposes which will contribute most to crop production under the war effort.

In this connection, just a word or two regarding the proposed fertilizer order for next year, which was in process of preparation when I left Washington, and which it is hoped will be issued shortly. The revision is stream-lined and many things in the present order are to be deleted, the grade substitute schedule for one. It is contemplated that the new order will embody these general principles: fertilizers and fertilizer materials will be directed to purposes and uses which will make the greatest contribution to food, feed, and fibre production; the approved grade list will be continued with revisions now being worked out in cooperation with the States; and a simplified application form is anticipated with eligibility based upon requirements for the coming season. A crop classification is in the picture, which will provide that Group A crops receive priority in deliveries but requiring, however, that such applications be filed a reasonable period before the fertilizer is needed. Requirements will be established on the basis of the acreage to be planted, using defined rates of application per acre in terms of nitrogen, phosphoric acid, and potash, with the State recommendations as the maximum. Further, provision is being made whereby a farmer may take early delivery of his requirements.

Thought is also being given to measures which will permit some fertilizer to be delivered and used for so-called non-essential purposes. What can be done along this line

(Continued on page 16)

WALKER URGES CITRUS GROWERS TO COOPERATE

(Continued from page 11)

cil of Farmer Cooperatives, of which the Florida Council of Farm Cooperatives is one of the 14 associate state members.

Co-ops have taken the position that they do not earn profits or sustain losses as such, that savings for services rendered are taxable against the individual member, and that the cooperative way is the way of freedom and equality and should be preserved.

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WAR FOOD ADMINISTRATION AND THE CITRUS INDUSTRY

(Continued from Page 8)

the American people is a wonderful thing; it accounts for our war effort being as far along as it is, but our enthusiasm for doing the job has to be watched. The granting of priorities on an equitable and efficient basis is difficult. Not every person that applies for irrigation piping, fertilizer, canning facilities gets them. Perhaps mistakes have been made and will continue to be made.

Utilization of Food Produced in Most Efficient Form

We had this season a crop of 88 million boxes of oranges, 47 million boxes of grapefruit, and 14 million boxes of lemons. In view of the existing tin, container, transportation and labor shortage, the question is in what form should the crop be moved in order to contribute most to the war effort?

To insure adequate supplies of the canned citrus products for Government requirements, to conserve tin by requiring civilians to utilize most of these citrus fruits in fresh rather than canned form, and to insure supplies of canned grapefruit when the fresh fruit is not on the market, Food Distribution Order 3 was issued by the Director of Food Distribution.

Beginning with January 9, 1943, the production of all citrus juices, except unconcentrated grapefruit juice, is reserved for war requirements. Canned grapefruit juice was frozen first at processor levels and later at distribution levels from January 6 to March 23. The freezing of canned grapefruit juice resulted in forcing consumers to use, during this period, only fresh grapefruit which was on the market in large quantities and in conserving the canned supply until the period of the year when less fresh grapefruit was available.

Notwithstanding the fact that the Government had constructed two concentrate plants in Florida, it was evident toward the middle of January that Government requirements of orange concentrates was not going to be met. Although the combined concentrate plant capacity was adequate to secure these supplies, the California plants were not getting the fruit to operate plants in that State at full capacity. On January 20 Food Distribution Order No. 6.1 was issued requiring all handlers of oranges in Arizona and California to set aside, for processors, a quantity of oranges equal to 20 percent of their weekly shipments. Government requirements for the fiscal year (July 1, 1942, to June 30, 1943), are approximately 3,000,000 gallons of orange concentrates, 700,000 gallons of lemon concentrates and 120,000 gallons of grapefruit concentrates. To May 10, 1943, the Government had acquired 2,780,000 gallons of orange concentrates, 555,000 gallons of lemon concentrates and 93,157 gallons of grapefruit concentrates. There has been some complaint (not serious) from California growers that it was unfair to require a 20 percent set-aside for California growers, and not make the same requirement of Florida growers. The answer, of course, is that since the concentrate plants in Florida were running at approximately full capacity, nothing would be gained by imposing such a regulation on the industry.

To insure further adequate supplies of canned citrus for Government requirements, all canners of fruit and fruit juices are required, under Food Distribution Order No. 22.2, to set aside for delivery for Government requirements, a quota equal to a certain percent of their 1941-42 pack. These quotas are 19 percent of grapefruit segments, 58 percent of grapefruit juice, 45 pedcent of Florida orange juice, 21 percent of orange juice in States other than Florida, and 100 percent of blended grapefruit and orange juice. The Government's requirements from the 1942-43 season's pack, of 6,750,000 cases (24/s) of grapefruit juice, 885,668 cases of grapefruit segments, 1,668,842 cases of orange juice and 2,888,136 cases of blended orange and grapefruit juice are being purchased under Food Distribution Order No. 22.2.

Under another Food Distribution Order, California Thompson Seedless, Muscat and Sultana grapes are required to be converted to raisins. Many other similar Food Distribution Orders are in operation.

(Concluded Next Issue)

THE FERTILIZER SITUATION FROM A NATIONAL STANDPOINT

(Continued from Page 14)

will depend upon the showing when probable supplies are definitely balanced out with essential requirements. Similarly it may be possible that restrictions on the use of chemical nitrogen on melon and cucumber crops may be lifted.

In closing, permit me to express the appreciation of the men in Washington who have had the responsibility of administering the order, to the people in Florida who have made the program a success through their cooperation and assistance. The State Defense Council, The State War Board, the Land-Grant College and Experiment Station officials, the industry and the growers in the state have all worked together. We especially appreciate the coopeeration rendered to our Field Service Representative in Florida. We have received a minimum of complaints from Florida. Most of these have been settled promptly and to the satisfaction of all concerned. In a few words, the order worked in Florida as it was anticipated it would, and it was the whole-hearted cooperation of Florida people that contributed much to the successful outcome of the program.

Again I say, "Thank you," for the privilege of being with you on this occasion.

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DECAY CONTROL IN FLORIDA LEMONS

(Continued from page 10)

fruit, and the proportion of Diplodia rot was much less than in the non-borated lot, but probably greater than in non-gassed fruit.

Sodium-ortho-phenyl-phenol afforded its principal protection against stem end rot during the first two weeks after treatment. Throughout the holding period there was proportionately less Phomopsis rot in these lots than in those treated with borax.

TABLE 3. Effect of packing house treatments on the development of the fungi causing stem end rot in leemons harvested by clipping. 1942.

Treatment	Number of fruit		Percent	
	In Test	With Stem End Rot	Phomopsis	Diplodia
No treatment:	232			
1st 13 days		8	87.5	12.5
Next 14 days		45	91.1	8.9
Total in 30 days		58	93.1	6.9
Ethylene:	232			
1st 13 days		27	22.2	77.8
Next 14 days		53	56.6	43.4
Total in 30 days		88	43.2	56.8
Borax before ethylene	232			
1st 13 days		10	60.0	40.0
Next 14 days		29	93.1	6.9
Total in 30 days		44	86.4	13.6
Phenate* in water after ethylene:	234			
1st 13 days		20	40.0	60.0
Next 14 days		72	68.1	31.9
Total in 30 days		103	63.1	36.9
Phenate in wax emulsion: (after eth.)	230			
1st 13 days		16	37.5	62.5
Next 14 days		88	72.7	27.3
Total in 30 days		118	66.1	33.9

* Sodium-Ortho-phenyl-phenol. 1.2% in water; 2% in diluted wax emulsion.

Discussion

The difference in rate of decay in fruit from the same trees during two seasons is worthy of comment. In 1937 the rate was nearly normal, in 1942 it was much lower than usual, as was also true with oranges and grapefruit. Weather conditions at or immediately before harvest time are known to have a marked influence on the keeping quality of citrus fruits. The fall of 1942 was exceedingly dry and not conducive to the development of rots.

The effectiveness of pulling fruit as a means of checking decay was quite consistent and the failure of borax to further reduce decay in pulled fruit has also been observed repeatedly in grapefruit.

The development of stem end rot in pulled grapefruit is very much in proportion to the amount of stem parts left adhering to the fruit. If the stem was broken at the base of the calyx, little if any reduction in stem end rot was recorded. When half or more of the calyx was removed, a substantial reduction in rot was noted; when all of the calyx was removed, leaving only the petal and stamen base, a further reduction was noted; when the entire button was removed without tearing the rind tissue, the maximum decay reduction resulted. Thus complete removal of the stem parts is essential for maximum decay control by this method, which probably applies to lemons as well as to grapefruit. With pulled lemons usually the entire button was removed, but in a small percentage of cases the rind was torn or "plugged" during harvesting, but no more frequently than clipper cuts occurred.

The efficacy of disbuttoning after gassing as a means of checking decay is strong evidence that the stem or stem parts is the principal avenue of entrance of the stem end rot fungi into the flesh of lemons. This is also true with grapefruit.

The data presented in tables 1 and 2 show abundant evidence that decay can be reduced through the use of antiseptics. Of the several antiseptics tested, borax is the safest and most effective over a long period, but to obtain maximum results with oranges and grapefruit it must be applied before the fruit is gassed, and be left on during the gassing

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period. The same principle probably applies with lemons, since the same fungi must be dealt with. There are other compounds, phenol derivatives, such as sodium-ortho-phenyl-phenol (Dowicide A), which for a week or two are about as effective as borax, and they can be applied either immediately after gassing or even a day later, in water or in most wax emulsions, with but little added effort or expense. These features are distinctly advantageous. To be effective and safe, both the temperature and the concentration of the antiseptic bath must be held within rather narrow limits, which, however, are not difficult to maintain.

Wax emulsion proved very effective in preserving a fresh, attractive appearance of the fruit without affecting flavor. 1/ Unless special protective measures are taken, the marketing and consuming period must be short or excessive spoilage is likely to be encountered. The rate of decay varies from year to year and from grove to grove.

Cultures made from fruits which had developed stem end rot showed that Phomopsis was the principal cause of rot in non-gassed fruit. After gassing the rapidly growing Diplodia increased considerably making its greatest increase in the fruit not treated with an antiseptic and least in that treated with borax. The increase in Diplodia could hardly be attributed to temperature of the coloring room because in the first and second pickings the heating equipment was not in use, and the gassing room was no warmer than the holding room. Dr. Charles Brooks pointed out at the meeting of this Society two years ago that ethylene activates the spores of the stem end rot fungi, particularly Diplodia.

Summary

Florida lemons ripen during late summer and fall when the weather is still warm and favorable for rapid decay development, especially stem end rot. The ethylene treatment, commonly applied to improve the color of citrus fruits, also renders lemons especially susceptible to rapid attack from the two stem end rot fungi.

Spoilage developed less rapidly in pulled than in clipped lemons. Such antiseptics as an 8% borax solution in water applied soon after the fruit is harvested, or sodium-ortho-phenyl-phenol (1.2% in water and rinsed off immediately, or as much as 2% in wax emulsion after gassing) were effective in checking decay and caused no rind injury.

Wax emulsion retarded withering and aging, thereby prolonging the period that the fruit remained in a fresh, attractive condition.

(Continued on page 22)

1/ This point is especially important since fruit exposed to the hot, dry fall air is likely to wither and become unattractive unless quickly consumed. The greatest amount of wilting was noted in the non-waxed lots, the least in those treated with plain wax emulsion.

★ **A Victorious Army must have tremendous supply lines. An uninterrupted stream of equipment, guns, planes, ammunition, food — on the spot when and where they are needed.**

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Some of them begin in packing houses here in Florida where, by the thousands, boxes of citrus fruits, hampers of vegetables, and crates of canned fruits and vegetables are packed daily. These Florida products have many destinations — the front lines, our Allied countries, the market-baskets of America. At home and overseas Florida food fights for Victory.

More crops — bigger and better crops will be needed to keep these supply lines in effective operation. Your Gulf field man, backed by Gulf's 40 years of experience in analyzing the needs of Florida soils, will help you get a record crop from every row. Gulf fertilizers, keyed to your soil, will keep your farm or grove active on the supply lines.

For Everything that Grows in Florida...use

GULF Brands of FERTILIZER

Friendly Fertilizers Keyed to Your Soil

The Gulf Fertilizer Company

Tampa and Port Everglades, Florida

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The LYONIZER

Department

COMPILED BY THE LYONS FERTILIZER CO.

Reports of Lyons Field Men . . .

POLK AND HIGHLANDS COUNTIES

J. M. (Jim) Sample

This section has been getting light rains and some groves are beginning to bloom. It is a little early for bloom to be making an appearance and most that we have noticed is a result of ample water on trees that were damaged by the drought of the early winter months. Growers are now busy making their spring application of topdresser and these mixtures are all carrying a complete range of secondary plant food elements. Also, nearly all growers are applying their dormant zinc-sulphur spray at this time, and are planning to come back with the copper sulphur spray for melanose about two or three weeks after the fruit has set. Groves are in a splendid condition as a whole, and a larger crop of fruit can be expected next year.

HILLSBOROUGH AND PINELLAS COUNTIES

C. S. (Charlie) Little

Most groves in this section are in very good shape and we are getting sufficient rain to maintain adequate moisture in the soil. This fact coupled with the light crop that some of our groves carried last season should result in a very fine bloom and a heavy set of fruit for the coming year. We are having a great deal of trouble in this territory with our Valencia crop in that the splitting and droppage is heavy. It is our opinion that the wet moist mornings have served to aggrevate this condition. Grapefruit is also dropping in some groves. A large percentage of the mid-season fruit has been moved and it looks like Valencias will have an open market just as soon as they are ready to be shipped. Bloom buds are beginning to swell and it appears that we are going to have an early bloom.

SOUTHWEST FLORIDA

F. W. (Felton) Scott

Most of the fall crops have been moved from this section and growers have been busy getting things under way for the spring crop. Land has been thoroughly cultivated and seed beds have been under way for some time. It appears that we will have a normal acreage of spring vegetables. Prices received for most fall crops were satisfactory. Grapefruit is being moved at a rapid rate from this section, but oranges are moving slower at this time. In fact many growers are behind with picking dates on their mid-season oranges. We are just beginning with our spring application of topdresser, but this will be just about completed during February. Spraying with the early zinc spray is under way at this time. Indications are that we will have an early bloom and that it will be extremely heavy.

WEST CENTRAL FLORIDA

E. A. (Mac) McCartney

We have had a successful season with the fall vegetable crop in this territory but the total production tonnage was far below the average because of the fact so many growers have gone into work other than farming. Those growers that have stayed by their farms have had good production and good prices and are now getting ready for their spring crops, and indications are that the acreage will probably be somewhat increased. Our citrus growers have also had a good season and now are going forward with their spring application of fertilizer. There also is considerable interest being shown in the spray program for the coming year that gives evidence of being more complete than in former years. We have moved a good portion of our early and mid-season varieties but during the month of January there was a lull in the movement that is expected to pick up within a short time.

NORTH CENTRAL FLORIDA

V. E. (Val) Bourland

We are having some trouble with fruit droppage in this territory but from all that we can learn from other sections that is very general at the present time and no doubt the early morning fogs and other weather conditions are playing an important part in this droppage. We have moved considerable fruit to date from this territory but we still have a large tonnage of mid-season fruit to place on the market. We are just completing our winter application of fertilizer and soon most growers will start with their early spring spray program. The vegetable sections in this territory have had a most successful season in that the production has been good and prices much better than usual. Growers are going forward with their plans for their spring crops and it appears that a near normal acreage will be planted.

We Growers Have A Job To Do

From time to time since this war started we have read in the newspapers and heard over the radio of the inhuman atrocities committed by the Nazis and the Japs, but the stories of mass murders and mass brutalities have been so casually stated that many of us have failed to fully grasp their true significance.

The recently published stories of individual officers of the United States army telling of the terrible atrocities inflicted upon the brave men of Bataan and Corrigedor, however, present so graphically the personal observations of these few men who managed finally to escape that the impact upon us cannot fail to register in all its awful clarity.

We growers have realized all along that our job was to provide food for our fighting forces, but after reading of the experiences of the bestial and unthinkably cruel treatment of these soldiers —American boys—the job becomes something more than just an effort to collaborate with the war program.

It becomes now a personal obligation of each of us to put everything we've got into the job in order that we may win this war quickly and to speed the moment when no Jap or Nazi may be in position to torture a single one of our brave men who are fighting our battles for us on on some distant front.

ADVERTISEMENT—LYONS FERTILIZER COMPANY

PLAY SQUARE...
DO YOUR SHARE

HE DID!

Display your colors now!

DO YOU remember that soldier you saw on the bus with his arm in a cast? Do you recall that sailor you saw hobbling down the street on a cane? Have you noticed the list of casualties printed from time to time in this newspaper?

What you are asked to do, compared to the boys who are really *in* it, is easy. But *your* job is mighty important, too. Once again you are asked to BUY AT LEAST ONE EXTRA HUNDRED DOLLAR WAR BOND. A Series E War Savings Bond will cost you only $75 and you get back at maturity in ten years, $4 for every $3 invested; this is the least you can do. Invest more if you possibly can—$200, $300, $400. Remember, it all comes back with *interest.*

So play square—*do your share.* HE DID!

Let's All BACK THE ATTACK!

WFA Warns Again on Container Shortage

The War Food Administration has repeated its warning to growers and shippers of fruits and vegetables that new wooden containers would be scarce in 1944. Growers and handlers of these commodities were asked to make the greatest possible use of used containers of all types — including wood crates and boxes, and open-mesh bags.

The outlook is dark, also, for egg crates of all kinds, meat packing boxes and similar containers.

Retailers and the buying public have been inclined to discriminate against used containers, but the War Food Administration now asks them to accept produce on its merit, irrespective of whether it is delivered in new or second hand packaging materials. Used containers, WFA officials explain, should be regarded as necessary "wartime packages," comparable with a re-capped rubber tire. The shortage of new containers is such that many fruits, vegetables and other food items in 1944 will either be delivered in used containers or not at all.

Officials of the War Food Administration and the War Production Board say that if yields are normal, wooden container materials will be short of the demand by 10 to 20 percent. They point out that similar shortages did not develop as expected in 1943 because spring freezes drastically reduced the eastern fruit and early vegetable crops, and summer drought caused heavy reductions in vegetable yields in parts of the east.

To illustrate the situation, WFA container authorities said that if the 1944 tree fruit crop is equal to the 1942 crop, 16 million more bushel baskets will be needed than actually were used in 1943. New fruit baskets will not be available to that extent in 1944.

The shortage of wooden containers is an example of the general scarcity of commercial wood and lumber products. Heavy military demands for containers, a more than 300 percent increase over pre-war use of lumber for packing and shipping, the manufacture of war goods, and a serious falling off in lumber and pulp wood production are the principal reasons for the shortage.

"Growers and shippers hold the key to an adequate supply of shipping containers, through expanded use of used containers," Russell A. Palen, package and container authority for WFA's Office of Materials and Facilities, said. "Fairly adequate salvage facilities exist for collecting all kinds of used containers but these facilities function only upon demand from growers and shippers. That is why we ask producers and distributors to anticipate all their 1944 requirements, and to get in early with their orders for used and re-conditioned materials."

Special freight rates already in effect for the shipment of second-hand fruit and vegetable containers from Official Classification territory into Southern Freight Association territory, and from the Chicago area and points east of the Mississippi river into the Pacific coast region. Applications for extension of reduced rates to other areas are pending.

In the field, representatives of the Food Distribution Administration and State Extension Services will be the sources of information for food growers, shippers and handlers who have container problems. Inquiries should be directed to county agricultural agents and local FDA officials.

DECAY CONTROL IN FLORIDA LEMONS

(Continued from page 19)

Phomopsis citri caused most of the stem end rot in non-gassed lemons. Ethylene greatly stimulated the development of the rapidly growing **Diplodia natalensis** and borax was more effective than phenate in controlling it.

FOR SALE

Four Carloads Once Used Knocked - Down Florida Bruce Boxes. If Interested Wire Collect.

Zeidman Company

2663 East 32nd St.

Cleveland, Ohio

FOR QUICK SALE

The following citrus trees are available for immediate planting. The sizes are from ¾ to 1½ inch caliper:

Thompson Pink Gf. on sour orange root—2000 trees
Foster Pink Gf. on sour orange root— 250 trees
Marsh Seedless Gf. on sour orange root— 800 trees
Minneola Tangelo on sour orange root—1300 trees
Seminole Tangelo on sour orange root— 250 trees
Minneola Tangelo on rough lemon root— 350 trees

These are extra nice trees. Prices in lots of 200 or more, 80c to $1.00 each. When writing please state number and size desired.

WARD'S NURSESY

AVON PARK, FLORIDA

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The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

FOR SALE — Niagara power duster, model F, with 4 HP Cushman engine, mounted on chassis. Used one season, in perfect condition. Price $375.00. C. O. Reiff, Marianna, Fla.

SUPERIOR CITRUS TREES on various rootstocks. Have trees on sour orange root for immediate planting. WARD'S NURSERY, Avon, Park, Florida.

Florida Agricultural Laboratory — Babson Park, Fla. Soil analyses and consultation on problems and programs. Consultant in Agricultural Processing and By-Products.

SMUDGE POTS — For Sale. Have approximately 80 good second-hand ones for sale. If interested write, W. J. LYLES, Summerfield, Fla.

CITRUS TREES—Best quality usual varieties on sour orange or rough lemon stock. Robt. P. Thornton, c/o Clay Hill Nurseries Co., Box 2880, Tampa, Florida.

PLACE ORDER NOW Fall Delivery Citrus Trees. All Varieties. Paramount Grove Service, Box 843, Lakeland, Fla. 10-6t

ALYCE CLOVER SEED — Ripe and cleaned. Ideal cover and hay crop. Write for information. P. E. Snyder, Box 866, Lakeland, Fla.